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## REVIEWS AND BOOK NOTICES.

CHEMICAL AND GEOLOGICAL ESSAYS.<sup>1</sup>—The manifest tendency of modern scientific researches and investigations is toward a unification of the sciences, and the volume forming the subject of this notice is a decided step in that direction. We have many and excellent text-books of geology as studied from the stand-points of physics and biology; but, with the exception of Bischof's treatise on chemical geology, which appeared nearly a generation ago, this is the nearest approach to a complete exposition of the intimate relations and interdependence of geology and chemistry which we have seen.

The work comprises twenty of the author's chief scientific memoirs, which have been published at different times during the past twenty-five years. They treat of questions in chemistry, and chemical and dynamical geology, and, to quote from the preface, "cover nearly all the more important points in chemical geology." The author says further that his researches and conclusions as developed in these memoirs "have been connected with the hypothesis of a cooling globe and with certain views of geological dynamics, making together a complete scheme of chemical and physical geology, the outlines of which will be found embodied in Essays I to XIII." Essays XIV and XV are chiefly historical, while the five brief papers which conclude the volume are devoted to the discussion of questions in theoretical chemistry and mineralogy.

In addition to the development of his own ideas, Dr. Hunt has in general given us the results achieved by his co-laborers, so that the work is in truth a fair representation of the present state of the science. Several of the more recently developed of our author's views, as those concerning the use of lithologic data as a basis for chronologic distinctions, and his theory of cycles in sedimentation, have not been generally adopted. The chemical and mineralogical data forming the basis of these hypotheses, however, may be accepted without question, and thus every reader is enabled to form an intelligent judgment concerning the truth of these hypotheses.

Essay XV on the "History of the names Cambrian and Silurian

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<sup>1</sup>Chemical and Geological Essays, by Thomas Sterry Hunt, LL.D. 12mo. pp. 489. Boston, 1874. J. R. Osgood & Co.

in Geology," is a very valuable contribution to the history of the science; and its value will increase with time. It throws a flood of light on points of great perplexity for the student; and Dr. Hunt has in writing it, done the science a real service. It is the first complete recognition of the claims of Sedgwick, from the pen of one well qualified to write the history of that painful controversy, and it is to be hoped that the time is not very remote when geologists will generally refuse to recognize the unwarrantable usurpations of Murchison.

Some little repetition has arisen from printing the essays in their original forms, but this could not be avoided, since the author wished to preserve a certain historic value which attaches to the papers, and which would have been lost by a change of forms and dates.

A copious index and table of contents add much to the usefulness of the work.—W. O. C.

CHECK LIST OF NORTH AMERICAN FERNS.<sup>1</sup>—This is a very neatly gotten up 8vo pamphlet, printed on excellent paper on one side of the sheet so as to admit of its being cut for herbarium labels. The specimens are numbered with the same numerals, and the nomenclature substantially agrees with that of Horace Mann's catalogue. I submit a few criticisms on Mr. Robinson's work. "3677<sup>a</sup> *Notholaena Newberryi*, Eaton, n. sp." The letter following a duplicate should be *b*, the letter *a* being commonly understood as applicable to the first occurrence of a number or name. "D. C. Eaton is given as the authority to other species, the inference being that there are two Eatons, both fern authors, whereas there is but one, the well known New Haven Professor. All herbarium labels and catalogues also for that matter, should have the reference as well as the author. If the original work be not accessible to the compiler then let the reference be to the work from which he quotes. Such a course clears up doubts, prevents blunders, and would here have been particularly useful in the cases of Prof. Eaton's new species. No European author quotes "*3763 Woodsia obtusa* Torrey" (always Hooker), for the reason that his catalogue, published in 1840, is unknown there, and is never quoted in American floras. If Mr. Robinson had referred to the *Synopsis*

<sup>1</sup> Check List of the Ferns of North America north of Mexico; by John Robinson.—Naturalists' Agency, 1873. 8vo. pp.